



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/892,837	06/27/2001	Jerry L. Klindt	9928	3739

26890 7590 07/30/2003

JAMES M. STOVER  
NCR CORPORATION  
1700 SOUTH PATTERSON BLVD, WHQ4  
DAYTON, OH 45479

EXAMINER

TRUONG, CAM Y T

ART UNIT

PAPER NUMBER

2172

DATE MAILED: 07/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/892,837

Applicant(s)

KLINDT ET AL.

Examiner

Cam-Y T Truong

Art Unit

2172

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other: \_\_\_\_

**DETAILED ACTION**

1. Claims 1-30 are pending in this Office Action.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 9-12, 19-22, 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bapat (USP 5295256).

As to claims 1, 11 and 21, Bapat teaches the claimed limitations:

"recursively retrieving object definitions for one or more database objects associated with a query to produce an ordered set of objects definitions" as (col. 10, lines 35-45). Bapat does not clearly teach the claimed limitation "building a copy of the database structure using the ordered set of object definition". However, Bapat teaches that header files are opened. At step 176 the input from the files are read and control passes to step 178 where it is determined whether a class or a struct definition is recognized. If either of these is recognized, the struct or the class is recorded in the class hierarchy table and the class attribute table. Control then passes to step 184. If not, control passes to step 184 bypassing step 180. At step 184 it is determined whether or not a method definition has been recognized. If so, the method definition is recorded in the class method table and control passes to step 188. If no method definition has been recognized at step 184, control passes directly to step 188

Art Unit: 2172

bypassing step 186. Step 188 determines whether or not the end of the input has been reached. If no, control passes back to step 176 where the next file is read. Class definitions are stored in order in the object class hierarchy. Thus, each class definition is retrieved in order. The above information shows that the system builds a data structure based on retrieved class or struct definitions by restoring retrieved class or struct definitions in class hierarchy table and class attribute table. Class definitions, which include objects, are represented as object definitions (col. 9, lines 2-20).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Bapat's teaching of restoring each retrieved class or struct definition in each file in class hierarchy table and class attribute table in order to allow any user can create a new data structure in order.

As to claims 2, 12 and 22 Bapat teaches the claimed limitations:

"recursively identifying objects associated with the query (col. 10, lines 35-45);

"categorizing each identified object into a category" as (col. 21, lines 30-60; col. 35, lines 65-67);

"retrieving an object definition for each identified object using a tool corresponding to the category with which the identified object is connected" as each object in the hierarchy is processed by a loop beginning at step 292 which selects every class definition in the object class hierarchy. Each class is retrieved. The system has the type of object. The above information shows that the system has included a tool to

Art Unit: 2172

retrieve an object definition corresponding to the type of an object are connected (col. 10, lines 35-45; col. 35, lines 65-67).

As to claim 9, 19 and 29, Bapat teaches the claimed limitation "the object definitions are ordered so that each object definition is ordered before the definition of any object that reference it" as each object in the hierarchy is processed by a loop beginning at step 292 which selects every class definition in the object class hierarchy. Each class definition is retrieved. Multiple inheritance-in which a class may inherit attributes from more than on parent class-is easily handled by creating one reference column as a pointer into the schema for each parent class. The above information shows that class definitions are stored in order in the object class hierarchy before the definition of any object that reference it (col. 10, lines 35-45; col. 23, lines 45-55).

As to claims 10, 20 and 30, Bapat does not clearly teach the claimed limitation "recursively retrieving object definition for one or more database object includes looking for references to the one or more database objects in a data dictionary". However, Bapat teaches that each object in the hierarchy is processed by a loop beginning at step 292 which selects every class definition in the object class hierarchy. Each class definition is retrieved. Multiple inheritance-in which a class may inherit attributes from more than on parent class-is easily handled by creating one reference column as a pointer into the schema for each parent class. A Object Dictionary contains metaclass information, or information about the overall schema of the application domain. The

Art Unit: 2172

population of the Object Dictionary was described in detail in connection with FIG. 11. It contains the list of all classes, and includes information about attributes, superclasses, subclasses, and methods (col. 10, lines 35-45; col. 23, lines 45-55; col. 44, lines 45-60). Since objects are stored in hierarchy which included classes, thus, it is obvious that retrieving object definition includes looking for references to the one or more database objects in a object dictionary.

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Bapat's teaching of retrieving each class definition in the object class hierarchy. Object definition contains list of all classes, superclasses, subclasses. Multiple inheritance-in which a class may inherit attributes from more than on parent class-is easily handled by creating one reference column as a pointer into the schema for each parent class in order to read or create structure of objects during processing objects.

4. Claims 3, 13 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bapat (USP 5295256) in view of Nackman et al. (or hereinafter "Nackman") (USP 6182281).

As to claims 3, 13 and 23, Bapat teaches the claimed limitations the categories include tables and views, join indexes, trigger" as tables, views, the join column into the parent class table will be used as the unique index, triggers (col. 8, line 20, col. 37, lines 30-35; col. 40, lines 1-5). Bapat fails to teach the claimed limitation "macros". However, Bapat teaches the different type of objects including tables, views, joined indexes (col.

Art Unit: 2172

8, line 20, col. 37, lines 30-35; col. 40, lines 1-5). Also, Nackman teaches Macros (col. 7, lines 35-37). It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Nackman's teaching of macros to Bapat's system in order to store a object in a dictionary.

5. Claims 4, 14 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bapat in view of Nackman and Tung Ng et al (or hereinafter "Tung") (USP 6279008).

As to claims 4, 14 and 24, Bapat discloses the claimed limitation subject matter in claim 1, except the claimed limitation "the tool is view statement if the identified object.....as a macro". However, Bapat teaches the source SQL statement for defining triggers, create table SQL command (col. 10, lines 40-45; col. 40, lines 1-5). Also, Tung's teaching of show-table-view button 1105 to show a view of tables corresponding to the database state 1204. The table view permits access to tables and database information associated with the database application state 1206 (col. 11, lines 60-67). Nackman teaches any Macros defined in the source, recognized by #defined command (col. 10, lines 32-35).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Bapat's teaching of the source SQL statement for defining triggers, create table SQL command, Tung's teaching of show-table-view button 1105 to show a view of tables corresponding to the database state 1204. The table view permits access to tables and database information associated with the

database application state 1206 and Nackman's teaching of any Macros recognized by # defined command in order to allow any user can have many choices for displaying objects or displaying configuration of any object to a user.

6. Claims 5, 15 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bapat in view of Ma et al (or hereinafter "Ma") (USP 5920725).

As to claims 5, 15 and 25, Bapat teaches the claimed limitation "retrieving unretrieved object definition.....the query" as (col. 10, lines 35-45). Bapat does not teach the claimed limitation "adding to the set of objects known to be associated with query .....associated with the query.....repeating items a and b....associated with the query". However, Bapat teaches each object in the hierarchy is processed by a loop beginning at step 292 which selects every class definition in the object class hierarchy. Each class definition is retrieved (col. 10, lines 35-45). Also, Ma teaches to insert a new field in database records requires that the database's format or schema be modified, step 30. Adding the cell-phone field to the database's records can be accomplished with the statement: alter table employee add cellno varchar 20, which alters the employee table by adding a field named "cellno" having up to 20 characters. The interfaces or input and output parameters for program objects which read database records are modified, step 32. The interfaces of many objects can be modified by changing the data structure for accessing the database by adding the new field: Class employee [ private: char name[64]; char address[255]; char officeno[20]; char hiredate[10]; float salary; char dept[32]; (col. 2, lines 50-67).



Art Unit: 2172

The above information shows that the system add a field named cellno associated with query to a data structure which include class employee. This class employee is represented as a object definition.

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Bapat's teaching of retrieving object definitions and Ma's teaching adding a field name to class employee in order to maintain object definition.

7. Claims 6, 16 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bapat in view of Tung.

As to claims 6, 16 and 26, Bapat discloses the claimed limitation subject matter in claim 1, except the claimed limitation "sending the ordered set of object definitions from a first computer to a second computer". However, Bapat teaches retrieving each object definitions (col. 10, lines 35-45). Also, Tung teaches that client sends database requests over Internet to server (col. 5, lines 55-57).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Bapat's teaching of retrieving each object definitions and Tung's teaching of sending database requests from client computer to server in order to allow a user can create a new database structure based on retrieved object definitions.

Art Unit: 2172

8. Claims 7-8, 8-18, 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bapat (USP 5295256) in view of Henckel (USP 6105036).

As to claims 7, 17 and 27, Bapat discloses the claimed limitation subject matter in claim 1, except the claimed limitation "changing the order of the ordered set of object definitions". However, Bapat teach each object in the hierarchy is processed by a loop beginning at step 292 which selects every class definition in the object class hierarchy. Each class definition is retrieved. This information shows that class definitions are stored in order in the object class hierarchy. Thus, each class definitions is retrieved in order (col. 10, lines 35-45). Also, Henckel teaches that the ordered arrangement of object definitions such that a visual indication of the arrangement of such object definitions in source code file is maintained. It means that the ordered arrangement of object definitions is modified (abstract, col. 6, lines 20-50).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Bapat's teaching of retrieving each object definitions and Henckel's teaching of the ordered arrangement of object definitions such that a visual indication of the arrangement of such object definitions in source code file is maintained to Bapat's system in order to save time for searching or displaying a object.

As to claims 8, 18, and 28, Bapat discloses the claimed limitation subject matter in claim 1, except the claimed limitation "changing the order of the order set of object definition....reference it". However, Bapat teach each object in the hierarchy is processed by a loop beginning at step 292 which selects every class definition in the

Art Unit: 2172

object class hierarchy. Each class definition is retrieved. This information shows that class definitions are stored in order in the object class hierarchy. Thus, each class definitions is retrieved in order (col. 10, lines 35-45). Also, Henckel teaches that the ordered arrangement of object definitions such that a visual indication of the arrangement of such object definitions in source code file is maintained. It means that the ordered arrangement of object definitions is modified (abstract, col. 6, lines 20-50).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Bapat's teaching of retrieving each object definitions and Henckel's teaching of the ordered arrangement of object definitions such that a visual indication of the arrangement of such object definitions in source code file is maintained to Bapat's system in order to save time for searching or displaying a object.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure  
Olsen et al (USP 6519642).

### ***Contact Information***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cam-Y Truong whose telephone number is (703-605-1169). The examiner can normally be reached on Mon-Fri from 8:00AM to 4:00PM.  
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu, can be reached on (703-305-4393). The fax phone numbers for the


Art Unit: 2172

organization where this application or proceeding is assigned is (703)-746-7239 (formal communications intended for entry), or: (703)-746-7240 (informal communication labeled PROPOSED or DRAFT).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703-305-3900).

Cam-Y Truong

7/25/03

  
JEAN M. CORRIELUS  
PRIMARY EXAMINER